

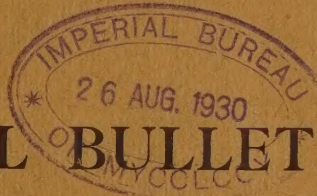
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INTERNATIONAL BULLETIN OF PLANT PROTECTION

DISCOVERIES AND CURRENT EVENTS *

Belgium: Health of Crops in 1929 (1).

Cereals.

Wheat. — The presence has been proved for the first time in Belgium of the bacterial disease known in America as 'black chaff' (*Bacterium translucens* var. *undulosum*) on wheat and spelt. The disease is characterised by the production of brown stripes on the glumes and paleae and sometimes on the stalks. The attack has remained quite mild.

The yellow rust of wheat (*Puccinia glumarum*) and the other cereal rusts have not been serious.

The loose smut of wheat (*Ustilago Tritici*) and of barley (*Ust. nuda*) have appeared in some places to an unusual extent.

Root Crops.

Potatoes. — As a result doubtless of the persistent drought the spread of wart disease (*Synchytrium endobioticum*) seems to have been checked for a time and no new centre has been reported.

Potato blight (*Phytophthora infestans*) has been practically non-existent.

Nectria Solani on the other hand has developed to a serious extent among potatoes in storage, specially in the Ardennes.

Beet. — It appears that the pathological conditions attributed to filterable viruses are developing in Belgium beet fields to an extent which warrants attention.

Turnips. — A typical mosaic of turnips has been observed to be abundantly present, specially in the region of Alost.

Industrial Crops.

Flax. — There has been very little blight (*Asterocystis radicis*).

Hops. — The spread of the downy mildew (*Pseudoperonospora Humuli*) has been checked by the drought.

Egypt: The Desert Locust (*Schistocerca gregaria*) (2).

The situation in Sinai during April 1930 was very grave as there was a second invasion of sexually mature locusts taking place coming from the East. Many of these appeared to have travelled far as they were much knocked about and many died after arrival.

* In this, as in the next chapter, the countries are arranged in French alphabetical order.

(1) Communication from the official correspondent of the Institute, M. E. MARCHAL, Directeur de la Station de Phytopathologie de l'État, Gembloux.

(2) Communication from Mr. E. BALLARD, Chief Plant Pathologist, Plant Protection Section, Ministry of Agriculture, Cairo, Egypt, to the International Institute of Agriculture.

Some settled in Sinai, while others continued their flight westwards and reached the Nile Valley. These were reinforced by more crossing the Red Sea from Arabia and invading Upper Egypt.

Egg-laying in the eastern Delta, Beheira and the Nile Valley was general as far as Quena.

Before the end of March hatching had become general in Sinai. By the first week in April hoppers had collected in large bands and marched in a general direction of N. to N. E. The most heavily infested areas were the N. W., the N. sandy zones and the Palestine frontiers near Kosseima. A small swarm of *Anacridium aegyptium* 40 × 6 metres was reported from Damanhour on April 9 coming from the N. going to the S.

In Sinai the main control methods adopted were baiting, trenching using sink plates and flame-guns. Collecting locusts or eggs was hardly practiced. It is a troublesome work, costs much and is impracticable in the thinly populated desert regions.

Wherever the poison bait was used very satisfactory results were obtained, while the flame-guns, if properly handled, continued to be an excellent weapon for fighting locusts.

Scouting all regions and especially the isolated wadies has been going on all the time.

No exact figures could be given at present of locusts and nymphs destroyed but there is no exaggeration whatever in saying that the former reached many tons while of the latter thousands of millions were destroyed.

In the Nile valley the situation was rather different. All provinces are thickly populated and corvée labour was the first thing thought of and practised. Big quantities of locusts were collected and flame-guns used.

Egg areas were hoed or ploughed and eggs collected but this method did not prevent hatching and very soon nymphs began to appear practically from all places which had just been dealt with.

Nymphs were destroyed by trenching and burning but again poison bait proved to be the best and the cheapest method.

In some cases locusts were sprayed with a 15 % solution of fish oil rosin soap.

The following table shows the amount of locusts and eggs reported destroyed in the different provinces:—

Province	Quantities destroyed in Kilos	
	Locusts	Eggs
Sharkja	865,430	15,261
Qualiubia	186,523	783
Menoufia	35,595	100
Beheirah	10,997	—
Dakahlia	6,040	055
Gharbia	2,833	—
Giza	236,224	3,954
Beni-Suef	203,996	1,221
Fayoum	206,238	081
Minia	555,935	1,850
Assiut	32,150	2,010
Oirga	5,434	46
Qena	7,943	19
Aswan	1,940	—
Total	2,357,284 or 2,357 tons	25,380 or 25 tons

Although the locusts reached the cultivated areas in all provinces yet, as expected, no damage of any importance was reported.

At Sharkia, Qualiubia and Beni-Suef Provinces which were the mostly infected places, the locusts were reported to have eaten, in some cases, the leaves of cotton and bersim plants. In one case at Tel El Kebir, Sharkia province, the damage inflicted on two feddans of bersim was estimated at 70 %.

Generally speaking we can say that all crops were saved and if the campaign during the next month will give as satisfactory results as those already achieved, then the locust invasion on Egypt during 1930, which can be regarded the most dangerous one that has ever occurred in this country, will pass safely.

United States of America: Outstanding Entomological Features (I).

The present notes refer to March, 1930.

Present indications are that white grubs (*Phyllophaga* spp.) will be unusually destructive in the East Central States and northward into Wisconsin.

The pale western cutworm (*Porosagrotis orthogonia* Morr.) and the army cutworm (*Chorisagrotis auxiliaris* Grote) are already appearing in destructive numbers in several of the Western States from Oklahoma to Nebraska. Reports have also been received of serious cutworm damage from the Gulf region.

The hessian fly (*Phytophaga destructor* Say) was first observed on the wing at Manhattan, Kans., on March 19, 1930.

The green bug (*Toxoptera graminum* Rond.) is reported as being very abundant in south-central Kansas.

By the third week in March adults of the alfalfa weevil (*Phytonomus posticus* Gyll.) were becoming active in Nevada.

The pea aphid (*Illinoia pisi* Kalt.) was starting to infest peas in the trucking sections of Virginia during the last week of March and alfalfa was very seriously damaged early in the month near Fresno, Calif.

Fruit aphid eggs were starting to hatch in the third week in March in Delaware, central Illinois, and Ohio.

Heavy winter mortality of the codling moth (*Carpocapsa pomonella* L.) is reported from Idaho, Utah, and Washington. The mortality in the Pacific Northwest was in larvae above the snow line, so that actual survival is much higher than this mortality would indicate. Larvae were commencing to pupate in New Mexico in the latter part of the month.

The eastern tent caterpillar (*Malacosoma americana* Fab.) seems to be less numerous than usual in New England and normal or above normal in numbers from Virginia southward. Eggs were observed hatching during the second week in March in Arkansas, and tents were started during the latter part of the month in the Carolinas, Georgia, and Virginia.

The apple maggot (*Rhagoletis pomonella* Walsh) is reported for the first time in Knox County in the extreme northeastern part of Nebraska.

The European red mite (*Paratetranychus pilosus* C. & F.) appears to be increasing in abundance in the East Central States, particularly in the Northern States. This insect has recently become established in central California.

(1) Communication from the official correspondent of the Institute, Mr. J. A. HYSLOP, Senior Entomologist in Charge, Insect Pest Survey, Bureau of Entomology, United States Department of Agriculture, Washington, D. C.

The notes contained in Mr. HYSLOP's two communications in Nos. 4 and 5 of this Bulletin refer to the months of October, 1929 and January-February, 1930 respectively.

Eggs of the fruit tree leaf roller (*Archips argyrospila* Walk.) are present in sufficient numbers to indicate trouble in Wisconsin, while in the infested parts of Idaho this insect is extremely scarce.

Adults of the plum curculio (*Conotrachelus nenuphar* Hbst.) began leaving hibernation in rather large numbers by March 17 in the Georgia fruit belt, while up to the third week in the month no adults had been seen in Delaware and Virginia. This emergence is unusually late and may prevent the development of a second brood before the Elberta harvest in the southern part of the Atlantic Coast region.

The unusual abundance of the citrus aphid (*Aphis spiraeicola* Patch) in Florida, reported the last of February 1930 has been very materially reduced by severe dashing rains.

Reports of serious damage by the vegetable weevil (*Listroderes obliquus* Gyll.) continued to be received from Mississippi during March. This insect is now known to occur in portions of ten counties in the San Francisco Bay district of California.

Reports of more or less serious damage by several species of mole crickets have been received from Alabama, Mississippi, and North Carolina.

Serious injury to ash by the ash borer (*Podosesia praxini* Lugger) is reported from parts of North Dakota.

The gloomy scale (*Chrysomphalus tenebricosus* Comst.) is unusually numerous in North Carolina. Last year it killed many shade trees.

The finding of the euonymus scale (*Chrysomphalus euonymi* Comst.) attacking Japanese spurge (*Pachysandra terminalis*) in Pennsylvania adds a new plant to the list of hosts of this insect.

Many reports of damage by termites (*Reticulitermes* spp.) to buildings were received. These came from the South Atlantic, East Central, and Gulf States.

Seed of cabbage palmetto have been severely damaged by *Pachymerus gleditiae* L. in Georgia.

* * *

The present notes refer to April, 1930.

The serious condition in Nebraska with regard to the army cutworm (*Chorizagrotis auxiliaris* Grote), reported in March 1930, has continued during the early part of April. The ring-necked pheasant was found to be a heavy feeder on this species, 122 larvae having been found in the crop of a single specimen. The usual number of spring reports regarding cutworms is being received from practically all parts of the country.

Wireworms (Elateridae), were reported as seriously damaging tobacco in Gadsden County, Florida, and sweet potatoes in parts of Mississippi.

Many reports were received from Georgia, westward through Mississippi, of June beetle (*Phyllophaga* spp.) damage to the foliage of pecan. White grubs are reported as very numerous in the North Central States.

Indications of serious trouble by the Hessian fly (*Phytophaga destructor* Say) are reported from Missouri. This insect emerged about a week earlier than usual in Oregon.

The chinch bug (*Blissus leucopterus* Say) remains, as during the last few years, at a very low ebb.

The corn ear worm (*Heliothis obsoleta* Fab.) is now appearing in southern Florida.

Many reports of unusual abundance of the clover leaf weevil (*Hypera punctata* Fab.) have been received from Illinois and Missouri.

Reports of very unusual numbers of crane fly maggots (Tipulidae) attacking meadows have been received from Illinois and Missouri.

Fruit aphids (Aphididae) appear to be moderately abundant over the New England and Middle Atlantic States but less than normally abundant in the East Central States. Over the remainder of the country these insects are reported as scarce.

The codling moth (*Carpocapsa pomonella* L.) appears, from hibernation counts, to be subnormal in abundance throughout the country. In many cases this is attributed to very high winter mortality.

The fall canker worm (*Alsophila pometaria* Harr.) is appearing in outbreak numbers in central California.

The first adults of the oriental fruit moth (*Laspeyresia molesta* Busck) appeared during the first week in April in Illinois and the second week in April in Delaware and southern Ohio. Heavy emergence was observed during the later part of the second week and the early part of the third week of the month in Indiana.

About the middle of April the first adults of the plum curculio (*Conotrachelus nenuphar* Hbst.) were observed leaving hibernation in Delaware and a few days earlier in northern Virginia. Egg-laying was well under way during the last week in the month in Georgia. The first weevils were found in the trees in southern Illinois on April 14.

The seed corn maggot (*Hylemyia ciliocrura* Rond.) is again proving very destructive to seed pieces of potato and to snap beans in the coastal section of South Carolina. Cool weather conditions delayed germination of the seed, which is probably responsible for this trouble.

The first adults of the Colorado potato beetle (*Leptinotarsa decemlineata* Say) were observed in the Charleston district of South Carolina on April 5. They were observed at Columbia, Mo., April 21.

A very serious outbreak of the strawberry weevil (*Anthonomus signatus* Say) is occurring in the Chadbourn and Burgaw districts of North Carolina.

A number of insects have been noted as attacking strawberry plants in Washington State. Among these are *Tylocoderma morbillosa* Lec., *Brachyrhinus ovatus* L., *Dyslobus decoratus* Lec., *Geoderces melanothrix* Kby., *Coniontis* sp., and *Eleodes* sp.

A report of what appears to be the first collection of the squash bug (*Anasa tristis* De G.) in the State of Idaho was received this year. The specimen was collected in 1929.

The turnip aphid (*Rhopalosiphum pseudobrassicæ* Davis) is becoming increasingly destructive in Indiana.

The juniper webworm (*Dichomeris marginellus* Fab.) is becoming increasingly destructive to juniper nursery stock in Lake County, Ohio.

The deodar weevil (*Pissodes deodarae* Hopk.) is causing considerable damage in many parts of Mississippi.

By the middle of April the bulb flies (*Eumerus strigatus* Fallen and *Merodon equestris* Fab.) were emerging in western Oregon.

The clover mite (*Bryobia praetiosa* Koch) is attracting considerable attention in the Eastern and North Central States by entering houses in very large numbers.

The Argentine ant (*Iridomyrmex humilis* Mayr) is occasioning considerable alarm in many parts of Mississippi.

British Guiana : *Fusarium cubense* Discovered in the Colony for the First Time (1).

Fusarium cubense, the causal organism of Panama Disease, has recently been discovered in this Colony for the first time. The isolation was made independently

(1) Communication from the official correspondent of the Institute, Mr. E. B. MARTYN, Botanist and Mycologist, Botanic Gardens, Department of Agriculture, Georgetown, Demerara, British Guiana.

by myself and the Banana Pathologist of the Imperial College of Tropical Agriculture, from wilted plantains (*Musa paradisiaca*). The fungus was isolated in conjunction with bacteria, which have hitherto been regarded as the sole cause of the local wilt disease of this crop. The Gros Michel banana is not cultivated here to any great extent.

Hungary: Insect Pests Observed during 1929 (1).

During 1929, after the extremely hard winter, comparatively few insects — if the number of species is considered — caused damage to crops which could be considered of economic importance.

Certain crop pests which make a regular appearance every year, such as *Schizoneura lanigera*, were almost completely absent. This was evidently due partly to the severe winter and partly to the unfavourable weather throughout the year.

Zabrus gibbus F. appeared till the spring of 1929 in a number of places where in 1928 it had seriously damaged the wheat. No damage caused by it was reported in 1929 however, which is in strong contrast to the year before, when in some places, for example, in the 'Komitat' of Heves, the losses amounted to 80 %.

It was a different matter with the development and increase of the Dipterous pests of cereals, specially *Oscinis frit* L. The late spring of 1929 kept back the early cereals and consequently the young oats were particularly damaged by *O. frit*, but later, as a result of a prolonged period of cold weather, the infested crops were able to re-establish themselves. The damage to barley caused by this insect in the summer was considerable, but nowhere disastrous.

Cleonus punctiventris Germ. showed a steady increase in 1928 and 1929. The control measures which were carried out continuously and for the most part systematically, have not yet been entirely stopped. The situation has gradually improved however and on the whole the results have been satisfactory. An example may be quoted from one farm where, over an area of 25 hectares of sugar beet, in a single day, 700 kilos of the insects were trapped by means of trenches. A total of 90 quintals were collected and sprayed 11 times with barium chloride. The damage caused by the insect amounted to 10 %.

Cassida nebulosa, a sugar beet pest which had been absent for 10 years, made its appearance again in 1929 to an unexpected extent. The damage done however was much less than the farmers feared, in spite of the control measures being effected late. *Epicauta verticalis* was also reported always on a large scale.

As regards locusts, *Stauronotus maroccanus* and *Caloptenus italicus* were reported absolutely incessantly.

Pyrausta nubilalis Hbn. was reduced after the 3 months of compulsory control. The mulberry scale (*Aulacapsis pentagona*) was largely destroyed in 1927-28 and still further in 1928-29 (up to 99 %) by the extreme severity of the winter. Consequently it was not possible to determine the results of the biological control started with *Prospaltella berlesii*.

It seems that the hard winter was also the cause of the complete disappearance of the Mediterranean fruit fly (*Ceratitis capitata* Wied.), which was reported in Hungary for the first time in 1928 near Budapest, and caused alarm by its serious damage to peach orchards.

(1) Communication from the official correspondent of the Institute, Mr. G. BAKÓ, Direktor der kön. ung. Entomologischen Station, Budapest, Ungarn.

India : New Diseases Reported during the Year 1929 (1).

PUSA (Imperial Institute of Agricultural Research) :—

Triticum vulgare. In addition to *Helminthosporium sativum* two new species were found to cause foot-rot and root-rot and were named *H. bicolor* Mitra in Poona and *H. halodes* Drech. var. *tritici* Mitra in Nagpur. *H. tritici-repentis* Died. has also been recorded for the first time on this host infecting leaves and leaf-sheaths.

Panicum frumentaceum. A new species of *Helminthosporium* was found infecting this host and was named *H. frumentacei* Mitra.

Zingiber officinale. A species of *Helminthosporium* which is a common leaf-parasite was determined during the year as a strain of *H. maydis* Nisikado and Miyake.

Cinchona. A species of *Phytophthora* has been found to cause blight in this capitalist crop.

Cajanus indicus. A species of *Rhizoctonia* was found as being responsible for wilt in this crop in addition to wilt caused by *Fusarium* already known.

Euchlaena luxurians. *Physoderma zeae-maydis* Shaw (?) was noticed to infect the leaves of this grass.

Launea asplenifolia. *Synchytrium* sp. has been found infecting this weed.

Cicer arietinum. *Myrothecium* sp. has been found to cause blight on this pulse crop.

Polyalthia longifolia. A fungus recorded on this host is probably *Phytophthora parasitica*.

BURMA (Reported by the Government Mycologist) :—

Piper betle. *Oidium* sp. causes brown patches all over the under surface of the leaves which later on turn greyish brown and form conidia on its surface. Subsequently the leaves turn yellow and drop off. The loss caused by this fungus is approximately 20-40 per cent. of the crop. The disease is at its worst in the hot season. The fungus has so far been observed only in Upper Burma. No suitable fungicide has yet been found to check the ravages of this disease. Mention may be made here of *Sclerotium rolfsii* and *Phytophthora* sp. causing wilt in this crop in Bombay Presidency.

Oryza sativa. A leaf spot disease of this crop caused by *Cercospora oryzae* Miyake has been observed in Upper Burma.

CENTRAL PROVINCES (Reported by the Government Mycologist) :—

Musa sapientum. *Cercospora musarum* has been observed for the first time causing black tip.

A "bark rot" was also observed for the first time in orange trees. The cause is unknown but the disease has been controlled by carefully removing the affected parts of the bark and the wood and painting the exposed surface with Bordeaux mixture.

BOMBAY PRESIDENCY (Reported by the Plant Pathologist) :—

Vitis vinifera. *Plasmopara viticola* has been observed as causing "downy mildew" in grapes.

Zea mays. *Sclerospora graminicola* var. *Andropogonis-Sorghi* has been found on it.

Piper betle. In addition to *Sclerotium rolfsii* a species of *Phytophthora* has been found to cause wilt. (Also see under Burma above).

(1) Communication from the official correspondent of the International Institute of Agriculture, Mr. M. MITRA, M. Sc., Ph. D., D. I. C., F. L. S., Imperial Mycologist in Charge, Imperial Institute of Agricultural Research, Pusa, Bihar, India.

Crotalaria juncea. A species of *Fusarium* was found to cause wilt.

Cuminum cyminum. *Alternaria* sp.

BENGAL (Reported by the Economic Botanist):—

Citrus decumana. A fruit rot disease attacking Pomelo was traced to *Pythiacystis* sp. Spraying with 1 per cent. Resin Bordeaux mixture was found partly affective in controlling the disease.

Nicotiana tabacum. A "leaf curl" disease has been found to be spreading in this crop in Bengal but so far no fungus has been traced in the diseased tissue.

India : *Macrosporium* Blight of *Cuminum cyminum* in the Bombay Presidency (1).

Cumin is cultivated in North Gujarat and in addition to powdery mildew (caused by an undescribed species of *Oidium*) to which it is highly susceptible if the weather conditions are favourable, is attacked by a species of *Macrosporium* which has not been recorded. The seedlings are blighted and the plants die in a few days. The disease is very destructive in wet years. The disease is under investigation.

Turkey : *Chelidoptera maculipennis*, a New Pear Pest (2).

Chelidoptera maculipennis is a new pest of pear orchards in the vicinity of Constantinople. It had already been collected by various entomologists at Smyrna and Amassia, but had not been reported as injurious to pear trees.

The adults appeared at the beginning of May; the females lay 40 to 50 eggs in a mass on the under side of the leaves. Hatching occurred two weeks later. The larvae feed on the leaves and protect themselves with a transparent web; finally they pupate and hibernate underground.

Chel. maculipennis may be regarded as a serious menace to pear cultivation. It is easily controlled with arsenical preparations and with nicotine.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Australia (Queensland). — By Act No. 11 of 27 November 1929 (The Diseases in Plants Act of 1929) the Diseases in Plants Acts of 1916 to 1924 are repealed.

The Governor in Council may from time to time by Proclamation declare that the introduction into Queensland from another State in the Commonwealth of any plant which is, in his opinion, likely to introduce any insect, fungus or disease shall be prohibited or permitted only as prescribed. Any diseased plant imported, introduced or transferred contrary to this Act may be seized and destroyed.

Every occupier or owner of an orchard may be required to register his orchard, and every occupier or owner of a nursery shall register his nursery on or before 31 January in every year.

The Governor in Council may appoint such qualified persons as may be necessary to be inspectors under this Act. The powers of the inspectors are contained in Arts.

(1) Communication from the official correspondent of the Institute, Dr. B. N. UPPAL, Plant Pathologist to Government, Bombay Presidency, Poona, India.

(2) Communication from the official correspondent of the Institute, Mr. SUREYA, State Counsellor, Angora, Turkey.

10 and 11. They may seize and detain for examination any plant, package or material suspected to contain or harbour any insect or fungus and may take away specimens for scientific examination. They may, without notice, enter at all reasonable times upon any land, premises, etc., to examine any plant or material which harbours or is likely to harbour any fungus or pest. When an inspector finds upon any land, premises or place any diseased plant or material harbouring any insect or fungus he may issue an order to the owner or occupier to destroy within a certain time the diseased plants or material. When an inspector finds any fruit which contains or has contained fruit fly [*Chaetodacus tryoni* Froggatt] or codling moth [*Cydia pomonella* L.] he shall order the owner immediately to gather and destroy all such fruit. If the owner of any fruit containing fruit fly or codling moth fails to destroy such fruit within 24 hours of its having fallen, such failure shall constitute an offence. An inspector, with or without assistants, may gather and destroy such fruit, the cost being recoverable as provided by section 13 of this Act. When in the opinion of the inspector it is necessary for the prevention of the spread of any virulent disease that any unaffected plant should be destroyed, he shall report the fact to the Minister who may thereupon issue an order to that effect.

If any occupier or owner of land, premises, etc., fails to comply with the orders of the inspector or Minister, an inspector, with or without assistants, may enter such land, etc., at any time to take such measures as may be necessary for the enforcement of such order. The inspector and his assistants in such a case shall not be deemed trespassers or be liable for any damages unless occasioned without reasonable cause.

No person shall be entitled to receive compensation in consequence of any measures lawfully taken for the eradication of any disease. In any case, however, where any plant not diseased is destroyed by direction of the Minister for the purpose of preventing the spread of any virulent disease, the owner of the plant shall be entitled to such compensation as he and the Director of Fruit Culture may agree upon; and failing their so agreeing the matter shall be submitted to arbitration.

The Governor in Council may by Proclamation declare any area to be a quarantine area for the purposes of this Act, and may determine the nature of the quarantine to be imposed, or may accept an undertaking given by the occupier or owner of the land to comply with the requirements of the Proclamation. Any inspector is authorized to supervise the carrying out of the quarantine. In any such quarantine area the quarantine may be general or in respect of a particular disease or pest. The removal, planting or transplanting of any plant which may be specified as within a quarantine area shall be prohibited unless permission is granted by the Minister.

Written notice shall be given within 24 hours of the discovery of any disease or pest to which this section has been made applicable by Proclamation published in the *Gazette*.

Arts. 23 and 24 contain the regulations concerning offences and penalties under the Act.

The Governor in Council may issue Orders in addition to or amendment of this Act which will give full effect to the purposes of the Act, and may from time to time issue any further regulations. (*Queensland Government Gazette*, Brisbane, 11th December 1929, No. 133, p. 1913-1927).

Eritrea. — By Governatorial Decree No. 4924 of 1 April 1930 a Phytopathological Service has been instituted under the Colonial Agricultural Office which will have the following functions:— (a) to carry out scientific studies and research in microbiology, pathology and zoology as applied to agriculture; (b) to provide for

the inspection of nurseries and other establishments which produce plants, plant parts and seeds for commerce ; (c) to provide for the dissemination of knowledge concerning plant diseases and pests and methods for their prevention and control ; (d) to supervise the importation into the Colony and the consignment of plants and plant parts in order to prevent the spread of new diseases and pests or the diffusion of already existing diseases and pests ; (e) to issue certificates concerning the sanitary state or origin of consignments of plants and plant parts. (*Bollettino Ufficiale della Colonia Eritrea*, Asmara, 15 aprile 1930, anno XXXIX, n. 7, p. 143).

Spain. — The Royal Decree No. 1139 of 18 April 1930 which gives the regulations relating to the foreign exportation of oranges during the present season, establishes *inter alia* that the fruits shall be free from scale insects and other parasites. (*Gaceta de Madrid*, Madrid, 20 abril 1930, año CCLXIX, tomo II, núm. 110, págs. 426 a 148).

France. — By the Law of 10 March 1930 concerning the protection of crops against rabbits ('lapins de garenne' [*Lepus (Oryctolagus) cuniculus*]) the provisions of the Decree of the Directory of 19 Pluviose An V, relating to the destruction of harmful animals, will be applicable to rabbits in the departments or parts of departments where they shall be declared a serious pest by Prefectorial Decrees, with the consent of the General Council, on the recommendation of a special Commission composed of the Prefect, the President, the Conservator of Waters and Forests, the Director of Agricultural Services, the President of the Chamber of Agriculture or his representative, and of two representatives of the sporting interests of the department.

The Prefect will issue an official order for the slaughter or other measures necessary after having notified the owners or holders of the game rights to carry out the destruction within a given time. He shall determine the conditions for the execution of the measures under the direction and supervision of the superintendent of vermin destruction.

The proceeds from at least half the rabbits killed will be for the benefit of the hospital or, failing that, for the Board of Charities of the Commune where the exceptional rabbit slaughter shall be carried out.

The conditions for the application of the present Law will be regulated by Decree. (*Journal Officiel de la République Française*, Paris, 12 mars 1930, 62^{ème} année, n° 61, p. 2754).

Italian Aegean Islands. — By Governorial Decree No. 54 of 2 April 1930 a Phytopathological Observatory has been instituted under the Agricultural Services of the Possession, with the purpose of preventing the introduction from abroad of plant diseases and pests and of controlling those already present.

* * By Governorial Decree No. 55 of the same date it was established that the introduction into the Possession of vine cuttings and layers, mulberry plants and their parts, plants and their parts of olives and wild olives, and plants and their parts of bananas, may be effected only after authorisation by the Agricultural Services of the Possession and provided that the shipment is accompanied by a certificate of immunity. (*Il Messaggero di Rodi*, Rodi, 17 aprile 1930, anno XV, n. 88, p. 3).

Italy (1). — A circular from the Ministry of Agriculture and Forests to the Royal Phytopathological Observatories strictly prohibits the introduction into railway

(1) Communication from the Ministry of Agriculture and Forests, Rome.

stations of cherries intended for exportation to England if they are infested with larvae of the cherry fruit fly (*Rhagoletis cerasi*) or any other insect. Consignments intended for export will be inspected in the exporter's stores and again at the station at Chiasso, from which all consignments for England must be despatched.

* * The Ministry of Agriculture and Forests has informed the Royal Phytopathological Observatories that cases of potatoes going to Austria need not in general be sealed with the seal of the Phytopathological Service. If, however, the consignment despatched to Austria will pass through one of the countries (Belgium, Denmark, Germany, France, England, Holland, Poland, Switzerland and Czechoslovakia) at present regarded as infected with 'wart disease' (*Synchytrium endobioticum*) such sealing will be required.

Morocco (French Protectorate of). — The Dahir of 1 February 1930 (2 Ramadan 1348) concerning the destruction of locusts (*Schistocerca gregaria* Forsk., *Doclostaurus maroccanus* Thnb., etc.) has for purpose the rapid determination of the location and amount of eggs, hoppers or adults, the co-ordination of efforts for their destruction, the immediate mobilization of the requisite control equipment, and the co-operation of the various elements of the population.

The Dahirs of 26 January 1916 (20 Rebia I 1334) and 30 December 1916 (15 Rebia I 1335) are cancelled. (*Feuille de Renseignements de la Direction Générale de l'Agriculture, du Commerce et de la Colonisation du Maroc*, Casablanca, 15 mars 1930, 11^{ème} année, n° 123, p. 46-47).

* * Swarms and eggs of the desert locust (*Schistocerca gregaria*) and eggs of the Moroccan locust (*Doclostaurus maroccanus*) having been reported in several localities of the French Zone of the Sherifian Empire, by Decree of the General Director of Agriculture, Commerce and Colonisation, dated 17 February 1930, the said Zone is declared locust infested. (EMPIRE CHÉRIFIEN. PROTECTORAT DE LA RÉPUBLIQUE FRANÇAISE AU MAROC. *Bulletin Officiel*, Rabat, 28 février 1930, 19^e année, n° 905, p. 281).

Norway (1). — The Royal 'resolusjon' of 21 March 1930, which came into force immediately, provides as follows:—

(1) until further notice *Graphium Ulmi* Schwarz shall be regarded as a fungus which is dangerous to plants, shrubs or trees;

(2) the importation of plants of *Ulmus* of any variety is prohibited.

Switzerland. — By a Regulation of 30 January 1930 concerning the importation of potatoes the Federal Department of Public Economy has, supplementing the Regulations of 19 May 1926 and 15 September 1927, prescribed that the certificate of origin referred to in Art. 1 of the Decree of the Federal Council of 5 October 1925 concerning the control of wart disease [*Synchytrium endobioticum*] will be required from 10 February 1930 also for consignments of potatoes coming from Belgium and Great Britain. (*Recueil des Lois Fédérales*, Berne, 5 février 1930, tome 46, n° 5, p. 63).

Tripolitania. — The Governorial Decree of 12 April 1930 which regulated the exportation from the Colony to any destination of fresh and dried fruits, citrus fruits and vegetables, establishes *inter alia* that products intended for exportation must be in a healthy condition. The inspector responsible for the control of consign-

(1) Communication from the Kongelige Landbruksdepartement, Oslo, to the International Institute of Agriculture.

ments will issue a certificate of inspection declaring the fitness of each package for exportation ; this certificate together with the phytopathological certificate must be attached to the delivery notes. The customs offices of Tripolitania will prohibit the departure from the Colony of any package not provided with inspection and phytopathological certificates. (*Il Bollettino Settimanale della Camera di Commercio, Industria e Agricoltura della Tripolitania*, Tripoli, 21 aprile 1930, anno VI, n. 16, p. 1).

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NOTES

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